



## Teacher's Background

Cenote

# Rich Soil for the Seeds of Civilization

One can only imagine the world that greeted the first Europeans who made contact with the great civilizations of the Americas. Before the arrival of Europeans in the early sixteenth century, roads and trade networks crisscrossed **Meso-America** and the Andes. These hubs linked huge urban centers with sources of luxury goods and fields growing some of the most diverse and important crops ever domesticated.

These great civilizations rose from a landscape that offered a rich array of **ecosystem goods** and **ecosystem services**, largely born from the physical geography of the land itself. The collision of **tectonic plates** thrust rugged mountains upward through Meso-America (the land between northern Mexico and northern Central America) and the central Andes.

The Nazca and Cocos tectonic plates plunge under the lighter South

American, North American, and Caribbean plates, melting and rising to the surface as a chain of **cone volcanoes**, part of the larger **Ring of Fire** that circles the Pacific. These volcanic peaks produce obsidian, a volcanic glass that can be chipped into razor-sharp blades, and bring minerals to the land that erode into fertile soils.

Tectonic activity folded the landscape, subjecting rocks and

minerals to varied amounts of heat and pressure. The pressure formed precious stones such as jade and turquoise. Minerals, such as gold, silver, and copper, melted deep into the earth and then rose to the surface in broad seams that could be easily accessed by miners.

At the juncture of the Caribbean and North American plates, a flat **limestone** seabed rose, forming the Yucatán Peninsula. This limestone





provides a valuable ecosystem service, neutralizing the acid created as a result of decomposition of vegetation and resulting in tropical soil that can support intensive agriculture. Water easily erodes limestone, resulting in a succession of caves and sinkholes along the Yucatán. In the dry northern section of the peninsula, these sinkholes (called **cenotes**) function as natural wells, providing people with access to fresh water. In places in the central Yucatán miners continue to extract dolomite (a special kind of limestone) for commercial fertilizers.

Along the Pacific coast, **upwelling** driven by wind brings dense, cool, nutrient-rich waters from the ocean depths. The nutrients from deep in the ocean support some of the most productive fisheries in the world along the coast of Peru and Chile.

This dramatic tropical landscape exerts a powerful influence on regional climate. The early civilizations of this region developed entirely within the tropics; however, the topography influences air and water cycling so dramatically that virtually every climate in the world can be found in the region. As air rises over the mountains it loses its ability to hold water, which condenses and falls as precipitation. Air funneled through peaks and trapped by valleys creates whipping winds and traps misty fog.

The effects of mountains on climate are especially pronounced in the Andes, which rise to a staggering 22,000 feet (6,706 meters), sometimes within less than 100 miles (161 kilometers) of the Pacific coast. These high peaks can trap bodies of air so completely that adjacent valleys can produce markedly different microclimates. Additionally, the oceans on either side of the mountains are different temperatures, resulting in large differences in rainfall on the eastern and western slopes of the Andes.

In Meso-America, water evapo-

rated from the warm Caribbean Sea drops on the slopes above the eastern lowlands and supports humid tropical rainforests. The cooler Pacific shore has a marked wet season in the summer and dry season during the winter.

Because of their elevation, the Andes produce even greater ecosystem variation. Lush eastern slopes squeeze water from the warm tropical Atlantic into the Amazon Basin. As air currents rise over the lofty peaks, they create conditions so cold and dry that food set outside becomes freeze-dried. The cold Humboldt Current sweeps northward from Antarctica along the Pacific coast, causing water in the air to condense over the sea. This trapping of moisture at the ocean contributes to the formation of a barren desert along the western coast of South America. In some places there, no rainfall has dropped for more than 400 years.

This variety of climates and soils provides conditions for some of the most remarkable **biological diversity** on Earth. For much of its history, South America was a biological island where unique groups of animals and plants evolved in isolation.

Approximately 3 million years ago North and South America joined at the Isthmus of Panama. Some groups of animals (such as South American marsupial carnivores) became extinct as more successful competitors, such as foxes and jaguars, moved in from North America. Others, such as South American armadillos, sloths, and opossums, established

themselves on both continents.

Still other animals (such as the alpacas, llamas, and vicuñas) became extinct where they originated (North America) but established populations in new areas to the south (the Andes and Patagonia).

This exchange of species contributed to high biodiversity in this region today. South America supports more than one-third of all the bird species on Earth. In fact, more bird species occur within the borders of Peru than in North America and Europe combined. The tiny nation of Costa Rica has more kinds of butterflies than the enormous continent of Africa.



Three-toed sloth





Pot decorated with Storm God surrounded by corn

## Sprouting Corn and Raising Temples

The Inca and Aztec (and, to a lesser extent, the Maya) represent only brief moments in the vast history of civilization in **Latin America**. Telling the story of South American civilization by examining only the 90-year reign of the Inca is like telling the history of Europe by looking only at Germany after the end of World War I. Accordingly, the following represents only a brief, broad-brush overview of civilization in the Western Hemisphere, where coastal temples rose hundreds of years before stones were laid for the first pyramid of Egypt and guinea pigs were domesticated a thousand years before people bred horses.

People may have hunted and gathered resources in the verdant valleys and rugged mountains of Latin America for as long as 12,500 years, but the story of the great civilizations that rose from these soils really begins at approximately 6000 BCE (Before the Common Era). At that time Meso-American farmers plunged their planting sticks into the ground and dropped in the first grains of domesticated corn (*Zea mays*) and Andean peoples selected and planted cotton (*Gossypium* sp.) and potatoes (*Solanum tuberosum*). Rich tropical biodiversity and a wide variety of soils and climates allowed for the domestication of many of the world's most important food crops (see table below).

### Some Important Crops Domesticated in the Americas

Amaranth	Cotton	Potato
Avocado	Gourds	Quinoa
Beans (genus <i>Phaseolus</i> )	Guava	Squash
Cacao	Manioc/cassava	Sunflower
Chia	Papaya	Sweet Potato
Chiles	Peanut	Tomatillo
Corn	Pineapple	Tomatoes

The dramatic geography of Latin America not only contributed to biodiversity, but also to cultural diversity. In fact, the region provided such a significant physical barrier that Andean and Meso-American civilizations likely developed along almost completely independent cultural lines.

The earliest cities in South America date to approximately 3500 BCE in river valleys near the Pacific coast. Archaeological studies suggest that these cities started as fishing communities; residents of these areas may have begun to cultivate cotton for fishing nets centuries before growing food crops. With the domestication of the llama at approximately 3000 BCE in the Andean highlands and the increasing prevalence of domesticated crops, particularly corn and potatoes, population centers began to grow in mountain valleys. As agriculture increased, Andean peoples began to develop complex social systems that fostered the communal construction of terraces and irrigation systems to farm in steep areas with rich soil but largely unpredictable rainfall in both the Andes and along the Pacific coast.

Meso-Americans planted some of the first domesticated cornfields. The earliest documented maize is from highlands of Oaxaca, dating to about 4250 BCE but it was a relatively minor crop at the time, and may not have been planted in formal fields. There, the earliest great cities of Meso-America, built by people known as the Olmec, arose in approximately 1200 BCE. Historians generally agree that civilization here followed a similar course to that of the peoples in other fertile valleys such as the Nile, Indus, and Tigris-Euphrates, although the Olmec did not live in a valley. In all of these areas, extremely productive agriculture produced food surpluses that supported specialization of labor, differentiated social classes, and increased demand for luxury goods.





Mexican beans at market

Many foods domesticated in Latin America can be preserved for long-term storage. In dry places, kernels of corn keep for several years. Potatoes freeze-dried by the cold dry air of the high Andes last for as many as 10 years. In addition to corn and potatoes, peoples of this region did and continue to dry and store a

variety of other foodstuffs, including beans, amaranth, chia, sunflower seeds, cassava, and peanuts. In fact, the English word “jerky” comes from charqui, the Inca (Quechua) word for dried meat.

Archaeologists define the **cultures** of the Andes and Meso-America largely according to the remains of **material culture**: architecture, pottery, art, and other physical evidence of lifestyles and beliefs. When studying the three cultures, remember that only the Maya can be clearly traced from their early agricultural roots to the time of Spanish conquest through a visible evolution of distinctive artifacts left in the Maya area over time.

The Aztec and Inca cultural styles represent an amalgamation of many cultures before them. These two imperial peoples did not achieve prominence until fewer than 200 years before the Spanish landed on their shores. The Aztecs built their capital city, Tenochtitlan (now

Mexico City), on an island in Lake Texcoco in the Valley of Mexico

in 1325. This was the center of the the Aztec civilization that extended from the Pacific Ocean to the Gulf coast throughout what is today central and southern Mexico. The Inca empire arose in the 13<sup>th</sup> century high in the Andes Mountains of Peru. The capital city, Cuzco, is the longest inhabited city in the Americas.

The dramatic physical and biological abundance and rich cultural history of the Americas greatly influenced the Maya, Aztec, and Inca cultures and continues to shape their descendants today. Mexican cuisine, Guatemalan weaving, and Andean music, among many other cultural artifacts, continue to tie modern Latin American culture with cultural traditions established thousands of years before Europeans arrived in the Americas.



## Glossary

### Biological diversity (biodiversity):

The variety of life over some spatial unit, used to describe all aspects of the broadly diverse forms into which organisms have evolved, especially species richness, ecosystem, complexity, and genetic variation.

**Cenote:** A body of water that is found in a collapsed cave and often forms a natural well by exposing the water table.

**Cone volcano:** A cone-shaped mountain made from successive layers of lava and ash usually found near tectonic plate boundaries.

**Culture:** A way of life defined by tangible objects and non-tangible beliefs, behaviors, values, and traditions.

**Ecosystem goods:** Tangible materials, such as timber and food produced by natural systems, that are essential to human life, economies, and cultures.

**Ecosystem services:** The functions and processes that take place in natural systems, such as pollination, that support or produce goods and help sustain human life, economies, and cultures.

**Latin America:** Mexico, Central America, and South America.

**Limestone:** Sedimentary rock consisting mainly of calcium carbonate formed from marine sediments that is used as a building material and to make lime.

**Material culture:** Tangible artifacts produced by a particular culture.

**Meso-America:** The area from central Mexico to northern Central America where pre-Columbian urban civilizations flourished.

**Ring of Fire:** An area that encircles the Pacific Ocean basin and corresponds roughly to tectonic plate boundaries, known for frequent volcanic eruptions and earthquakes.

**Tectonic plate:** A massive piece of solid rock that “drifts” on the surface of Earth’s crust and whose interaction with other plates results in earthquakes, continental drift, and the rise of mountains.

**Upwelling:** The rising of colder, nutrient-rich deep waters to the surface or photic zone.



# Unit Planner

	Lesson	Learning Objective(s)	At a Glance
1	<b>From Riches to Ruin—Tales of Two Cities</b>  <b>Preparation Time:</b> 20 min. <b>Instructional Time:</b> 55 min.	<ul style="list-style-type: none"> <li>■ Discuss the role of physical geography, climate and the availability of natural resources in the development of Maya, Aztec and Inca urban societies.</li> </ul>	<p>Students read about the economic rise and fall of two California towns: Bodie and China Camp. They read a similar history of the Maya city of Copan. Using a chart and responding to questions, they compare the characteristics that allowed each to become a thriving town or city.</p>
2	<b>Born In the Shadow of Mountains</b>  <b>Preparation Time:</b> 15 min. <b>Instructional Time:</b> 55 min.	<ul style="list-style-type: none"> <li>■ Use a map to identify the locations of Mexico, Central America, and South America and identify the location of major landforms in the region.</li> </ul>	<p>Students identify and locate Mexico, Central America, and South America. They create a map that outlines some distinctive features of the region using a set of cards that provides the locations of important resources associated with the features.</p>
3	<b>From Tropical Forests to Icy Glaciers</b>  <b>Preparation Time:</b> 20 min. <b>Instructional Time:</b> 55 min.	<ul style="list-style-type: none"> <li>■ Differentiate among the climatic zones throughout Mexico, Central America, and South America.</li> </ul>	<p>Students create a climate map of Mexico, Central America, and South America. They listen to a guided visualization that takes them from the Pacific coast across the Andes to the Amazon to learn about how landforms and elevation influence the climates of this region.</p>
4	<b>Hotbed of Biological Diversity</b>  <b>Preparation Time:</b> 20 min. <b>Instructional Time:</b> 55 min.	<ul style="list-style-type: none"> <li>■ Describe the dependence of the Maya, Aztec, and Inca civilizations on the goods and ecosystem services provided by the local natural systems.</li> </ul>	<p>Students use a map and a map key to identify and locate Latin American ecosystems. They look at landforms, climates, and ecosystems to learn about the availability of goods and the locations of services. They interpret photographs to identify the goods and services that benefited the Inca, Maya, and Aztec.</p>





Prerequisite Knowledge	All Materials Needed	Textbook Alignment
<p><b>Students should be able to:</b></p> <ul style="list-style-type: none"> <li>state that resources are unequally distributed over Earth's surface.</li> <li>define the following terms: "renewable resource" and "nonrenewable resource."</li> <li>explain that even renewable resources (such as timber and water) can be exhausted if they are overharvested.</li> </ul>	<p><b>Lesson Toolboxes identify lesson-specific needs.</b></p> <p><b>Activity supplies:</b></p> <ul style="list-style-type: none"> <li>Atlases: several showing countries of Latin America and the location of the equator and tropics</li> <li>Colored pencils or markers: one set of for each group of four students</li> <li>Dice: one die per group of four students</li> <li>Envelope: one per student group</li> <li>Markers: four different colors per group</li> <li>Pencils: four per group</li> <li>Student Journals: one notebook or folder for each student; make sure folders include a slot where students can place handouts, maps, and other materials associated with the unit.</li> </ul> <p><b>A-V equipment:</b></p> <ul style="list-style-type: none"> <li>Overhead or LCD projector, screen</li> </ul> <p><b>Class supplies:</b></p> <ul style="list-style-type: none"> <li>Transparency markers</li> </ul>	<p><b>Prentice Hall:</b> Medieval and Early Modern Times (2006) Pages SE 186-190, 212-215, 228-229, 238-241</p> <p><b>Holt:</b> World History: Medieval to Early Modern Times (2006) Pages 384-394, 403, 410-412, 414, 422-426, 435-437</p> <p><b>McDougal Littell:</b> World History: Medieval and Early Modern Times (2006) Pages 367-373, 380-386, 388, 390-398, 403-411, 416-419</p> <p><b>Glencoe:</b> Discovering Our Past: Medieval and Early Modern Times Pages 451-455, 457-464</p>
<p><b>Students should know about:</b></p> <ul style="list-style-type: none"> <li>the ways basic geologic processes such as continental drift and tectonic plate movement contribute to the creation of landforms through folding, faulting, and uplift.</li> </ul> <p><b>Students should be able to:</b></p> <ul style="list-style-type: none"> <li>read a basic map.</li> <li>create a map key.</li> </ul>		
<p><b>Students should know about:</b></p> <ul style="list-style-type: none"> <li>the influence the ocean has on the weather and note the role that water cycles play in weather patterns.</li> <li>how the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, climate, and soil composition.</li> </ul>		
<p><b>Students should know:</b></p> <ul style="list-style-type: none"> <li>that the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.</li> <li>that water vapor in the air moves from one place to another and can form fog or clouds, which are tiny droplets of water or ice and can fall to Earth as rain, hail, sleet, or snow.</li> </ul> <p><b>Students should be able to:</b></p> <ul style="list-style-type: none"> <li>identify the location of human communities that populated major regions of the world and describe how humans adapted to a variety of environments.</li> <li>discuss the climatic changes and human modifications of the physical environment that gave rise to the domestication of plants and animals and new sources of clothing and shelter.</li> </ul>		



# Unit Planner

	Lesson	Learning Objective(s)	At a Glance
5	<b>Treasure as Tribute from a Rich Land</b>  <b>Preparation Time:</b> 20 min. <b>Instructional Time:</b> 55 min.	<ul style="list-style-type: none"> <li>■ Provide examples of the goods and ecosystems services that were the basis of the Maya, Aztec, and Inca economies and trading systems.</li> <li>■ Discuss the role of physical geography, climate and the availability of natural resources in the development of Maya, Aztec and Inca urban societies.</li> </ul>	<p>Students examine historical illustrations to develop an understanding of the types of resources valued by Latin American cultures. They learn the Aztec numbering system to calculate the quantities of resources demanded by rulers as tribute payments. Students discuss how natural resources formed the base of economic and trading systems for these cultures.</p>
6	<b>Moving Resources Among Mountains</b>  <b>Preparation Time:</b> 10 min. <b>Instructional Time:</b> 45 min.	<ul style="list-style-type: none"> <li>■ Explain the factors involved in making decisions regarding the supply and use of natural resources and how such decisions were made in the Maya, Aztec, and Inca cultures.</li> </ul>	<p>Students work in pairs to read, discuss, and compare systems of resource distribution among the Aztec, Maya, and Inca cultures. They compare these three cultures and answer a series of questions for use during class discussions.</p>





Prerequisite Knowledge	All Materials Needed	Textbook Alignment
<p><b>Students should have:</b></p> <ul style="list-style-type: none"><li>■ completed previous lessons.</li></ul>		
<p><b>Students should have:</b></p> <ul style="list-style-type: none"><li>■ completed previous lessons on the geography of the area where the Inca, Maya, and Aztec cultures arose and know some of the products available to these cultures.</li></ul>		



# English Language Development

Lessons in the EEI Curriculum are designed to support students' English language development. The strategies in these lessons are based on some of the practices identified in the Reading/Language Arts Framework for California Public Schools (California Department of Education 2007) and ideas adapted from the San Joaquin County Office of Education's Regional Technical Assistance Center.

## To establish successful instructional strategies for all students, the teacher should:

- **Use a wide variety of ways to explain a concept or assignment.** When appropriate, the concept or assignment may be depicted in graphic or pictorial form, with manipulatives, or with real objects to accompany oral and written instructions.
- **Provide assistance in the specific and general vocabulary** prior to the each lesson, using reinforcement and additional practice afterward. Instructional resources and instruction should be monitored for ambiguities and language that could be confusing to students, such as idioms.
- **Ask each student frequently to communicate** his or her understanding of the concept or assignment. Students should be asked to verbalize or write down what they know, thereby providing immediate insight into their thinking and level of understanding. In addition, students should be encouraged to confer about each other's understanding of the concept being taught and the classwork or homework assignments, particularly if the students are not fully proficient in English.
- **Check frequently for understanding in a variety of ways.** When a student does not understand, analyze why.
- **Allow students to demonstrate their understanding and abilities** in a variety of ways while reinforcing modes of communication that are used on standardized tests.
- **Use pacing to differentiate instruction according to students' needs.** Reinforce the more difficult concepts for students experiencing difficulty in the language arts by providing additional time and using the visual aids provided. Accelerate the instructional pace for advanced learners if the assessments indicate mastery of the standard.





**The California EEI Curriculum includes a variety of research-based English language development practices, such as:**

## Vocabulary Development

- Teach difficult vocabulary prior to and during the lesson
- Provide reading, speaking, and assessment tasks that reinforce new vocabulary

## Reading Comprehension

- Use grade-level readers, articles, and reading assignments to build comprehension in the content area
- Engage students in meaningful interactions about text
- Provide activities that assess student comprehension and build decoding skills

## Writing Strategies and Applications

- Provide opportunities for students to organize ideas and information in a written form including concept maps

- Use stories, articles and other written materials to model good writing
- Provide assessment tasks that allow students to apply their grade-level writing skills

## Listening and Speaking Strategies and Applications

- Ask questions to ensure comprehension
- Elicit responses from all students, encourage students to give elaborate responses, and give students time to respond to questions
- Incorporate students' responses, ideas, examples, and experiences into the lesson
- Model and teach language patterns needed to understand and participate in the study of the content areas
- Encourage a high level of response accuracy
- Use visual aids, manipulatives, and real objects to support content delivery

The lessons in this unit can be used to support a variety of English language arts skills. This matrix summarizes how each of the lessons can be used to support English language development.

	<b>V</b> Vocabulary	<b>R</b> Reading	<b>W</b> Writing	<b>L</b> Listening	<b>S</b> Speaking
<b>Lesson 1</b>	✓	✓	✓	✓	✓
<b>Lesson 2</b>	✓	✓	✓	✓	
<b>Lesson 3</b>	✓	✓		✓	✓
<b>Lesson 4</b>	✓	✓		✓	✓
<b>Lesson 5</b>	✓	✓		✓	✓
<b>Lesson 6</b>	✓	✓	✓	✓	✓



# Differentiated Instruction

**T**he 2007 Reading/Language Arts Framework for California Public Schools (California Department of Education 2007) provides guidance for helping students with diverse abilities succeed with California's English–Language Arts Content Standards. The instructional units developed for California's Education and the Environment Initiative provide ample opportunities for teachers to differentiate instruction to meet these needs.

It is important to take into account the State Board of Education's and Department of Education's guidance on differentiated instruction while implementing this instructional unit. Page 263 of the 2007 Framework summarizes this guidance as follows:

*The diversity of California's students presents unique opportunities and significant challenges for instruction. Students come to school with a wide variety of skills, abilities, and interests as well as varying proficiency in English and other languages. The wider the variation of the student population in each classroom, the more complex becomes the teacher's role in organizing high-quality curriculum and instruction in the language arts and ensuring that each student has access according to the student's current level of achievement. The ultimate goal of language arts programs in California*

*is to ensure access to high-quality curriculum and instruction for all students in order to meet or exceed the state's English–language arts content standards. To reach that goal, teachers need assistance in assessing and using the results of that assessment for planning programs, differentiating curriculum and instruction, using grouping strategies effectively, and implementing other strategies for meeting the needs of students with reading difficulties, students with disabilities, advanced learners, English learners, and students with combinations of special instructional needs.*

## **Procedures that may be useful in planning for universal access are to:**

- Assess each student's understanding at the start of instruction and continue to do so frequently as instruction advances, using the results of assessment for program placement and planning.
- Diagnose the nature and severity of the student's difficulty and modify curriculum and instruction accordingly when students have trouble with the language arts.
- Engage in careful organization of resources and instruction and planning to adapt to individual needs. A variety of good teaching strategies that can be used according to the situation should be prepared.
- Differentiate when necessary as to depth, complexity, novelty, or pacing and focus on the language arts standards and the key concepts within the standards that students must master to move on to the next grade level.
- Employ flexible grouping strategies according to the students' needs and achievement and the instructional tasks presented.
- Enlist help from others, such as reading specialists, special education specialists, parents, aides, other teachers, community members, administrators, counselors, and diagnosticians when necessary and explore technology or other instructional devices or instructional materials, such as braille text, as a way to respond to students' individual needs.

Additional information about best practices in differentiated instruction are detailed in Chapter 7 of the Framework.



# Traditional Unit Assessment



## Description

**Sun Gods and Jaguar Kings** (Traditional Unit Assessment Master) assesses student mastery of the concepts presented in this unit. The first section focuses on student ability to use a map to connect information about landforms, climate, and ecosystem goods and services of the region. The vocabulary, short answer questions, and chart assess student understanding of the relationship between these factors and Maya, Inca and Aztec economies, trade, and urban development.

## Suggested Scoring

Use the Answer Key on page 22–26.  
The total possible score is 80 points.

## Advanced Preparation

### Prepare Assessment Masters:

- Make copies of Traditional Unit Assessment master, SM pages 4–8.

## Preparation Time

10 min.

## Assessment Time

35 min.



## Answer Key and Sample Answers

### Sun Gods and Jaguar Kings

Traditional Unit Assessment Master | page 1 of 5

Name: \_\_\_\_\_





## Answer Key and Sample Answers

### Sun Gods and Jaguar Kings

Traditional Unit Assessment Master | page 2 of 5

Name: \_\_\_\_\_

1. Label Mexico, Central America, and South America on the map. (3 points)
2. Draw borders around and label the areas occupied by the Aztec, Maya, and Inca on the map.  
(6 points: 1 point each for correct placement, 1 point each for correct labeling.)

**Use the map** to answer the following multiple choice questions. Select the best answer and circle the correct letter.  
(1 point each)

3. The Aztec capital, Tenochtitlan, was located at:  
 a. ☒ A  
 b. B  
 c. F  
 d. E
4. The location with a climate similar to that of most of California is:  
 a. C  
 b. ☒ D  
 c. E  
 d. J
5. If you wanted to go catch large numbers of fish, the best place to fish would be:  
 a. B  
 b. G  
 c. ☒ I  
 d. H

6. The Maya city of Copan is closest to:  
 a. A  
 b. D  
 c. ☒ E  
 d. F
7. A place with a tropical wet climate is:  
 a. A  
 b. ☒ C  
 c. D  
 d. F
8. If you wanted to gather cochineal, you would go to:  
 a. C  
 b. D  
 c. E  
 d. ☒ J
9. If you were visiting F, you would probably want to pack:  
 a. ☒ snow boots  
 b. snorkel  
 c. machete  
 d. sand goggles
10. Which ecosystem good might you find at E?  
 a. potatoes  
 b. ☒ jade  
 c. vicuña wool  
 d. cochineal
11. What is the name of the landform feature at B?  
 a. Caribbean Sea  
 b. Lake Texcoco  
 c. Lake Atitlan  
 d. ☒ Lake Titicaca



## Answer Key and Sample Answers

### Sun Gods and Jaguar Kings

Traditional Unit Assessment Master | page 3 of 5

Name: \_\_\_\_\_

12. Which ecosystem service is associated with I?
- a. Air is forced over high mountains, cooling and condensing it into rain.
  - ☒ b. The Humboldt Current brings water north from Antarctica, carrying with it to the surface nutrients that support large fish populations.
  - c. The complex structure of coral provides many habitats for different species, fostering biodiversity.
  - d. Fresh water is concentrated by river valleys, making it accessible for human use.
13. Which ecosystem service is associated with C?
- a. Plants bring water up from under the dry soil, making it available to animals and people.
  - b. Volcanic ash rains down on the soil, providing minerals for plant growth.
  - ☒ c. A low basin slows the flow of water and spreads it over the land, distributing nutrients over the landscape.
  - d. Mountains reach beneath the soil, creating large stores of fresh water underground.

### Definitions

14. Choose five of the following terms and write a short definition of each. (5 points each)

climate	rain shadow	cacao	chia
quetzal	agricultural surplus	mit'a	tzompantli

**climate:** *The average general temperature and rainfall in a particular area.*

**rain shadow:** *An area that is dry because of its proximity to high mountains.*

**cacao:** *Bitter seeds from which chocolate is made. An important luxury good and trade item for the Aztec and Maya.*

**cochineal:** *Bright red dye derived from a small cactus-eating desert insect.*

**chia:** *Grain native to Mexico that provided nutrition to Aztec warriors.*

**quetzal:** *Bird native to Central America with green tail feathers prized by the Maya and Aztec.*

**agricultural surplus:** *Quantities of food and fiber products above those needed to fulfill basic human needs.*

**mit'a:** *Labor, given by Inca subjects to the empire, often used for completing large public projects.*

**tzompantli:** *Aztec skull rack, displayed prominently to reinforce Aztec control over tributary towns and provinces.*



## Answer Key and Sample Answers

### Sun Gods and Jaguar Kings

Traditional Unit Assessment Master | page 4 of 5

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Name: \_\_\_\_\_

#### Short Answer (10 points each)

15. How do the Andes Mountains affect the climates found in tropical South America?

*The high mountains drive air upward, creating rain on the Amazonian side and forming a dry rain shadow desert on the Pacific side. Temperatures get cooler as you travel higher in elevation, resulting in a wide variety of different climates in the mountains.*

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16. What are at least two things we can learn from the Codex Mendoza regarding resource use by the Aztecs?

*The kinds of goods the Aztec considered valuable.*

*The kinds of goods available in different provinces.*

*The products made from raw materials (war costumes, carrying frames, jewelry).*

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## Answer Key and Sample Answers

### Sun Gods and Jaguar Kings

Traditional Unit Assessment Master | page 5 of 5

Name: \_\_\_\_\_

**Fill in the Chart** (1 point for each correct answer, total 15 points))

17. All three of the civilizations you have studied built major urban cities. In the table below, identify the capital city and provide examples of a geographical feature, the climate, and the types of resources available to each civilization that helped them build their cities.

	Maya	Aztec	Inca
Capital city	<i>The Maya lived in many city-states that grew powerful and faded over time; they thus had no single capital city. An example of a one-time capital is Copan.</i>	<i>The principal Aztec capital was Tenochtitlan.</i>	<i>Cuzco</i>
Geographical features	<i>River valley with rich volcanic soil. Streams flow into it the valley from the mountains.</i>	<i>Lake Texcoco</i>	<i>Andes Mountains</i>
Climate	<i>Tropical wet-dry. Sunny, warm and wet year-round.</i>	<i>Generally dry, sunny, warm, with most rain from June to September.</i>	<i>Montane These areas have a wide diversity of climates in a small area.</i>
Resources	<i>Rich soil, water, cacao, wood, shells, corn, beans, chiles, jade</i>	<i>Parrot feathers, honey, incense, corn and beans</i>	<i>Alpaca, vicuña, gold, copper, corn, and potatoes</i>
Who made decisions about the supply and use of resources that helped build the cities?	<i>Every city could grow a variety of crops and produced finished goods.  Some cities produced surpluses and traded for luxury goods (resources.)</i>	<i>The Aztec could efficiently acquire items from distant provinces and quickly build up wealth in their capital.  People in the provinces could take advantage of trade networks and have access to more luxury goods.</i>	<i>The Inca had a socialist society. The state controlled the distribution of resources.  The resources were shared. All of the people obtained food from public storehouses. This system allowed people to best use limited agricultural land and harsh environments.</i>



## Alternative Unit Assessment

### Description

This assessment can be used in conjunction with, or in place of, the traditional assessment. The learning objectives from all lessons are assessed as students use unit learning materials to complete a map and answer questions to demonstrate how landforms, climate, and natural resources affected the Aztec economies and the development of this society. The alternative assessment can be completed in one class period with a 30-minute homework assignment. Students should work individually on this assignment.

### Advanced Preparation

#### Gather and prepare Activity Masters:

- Have students gather Activity Masters from previous lessons:
  - **Mexico, Central America, and South America** from Lesson 2
  - **Landform Facts** from Lesson 2
  - **Latin American Climates** from Lesson 3
  - **Latin American Ecosystems** from Lesson 4

#### Gather and prepare Materials Needed.

- Gather and prepare Visual Aids:
  - Gather from previous lessons:
    - Codex Mendoza Tribute Records for Aztec Province of Tlaxtepec** from Lesson 5
    - Codex Mendoza Tribute Records for Aztec Province of Xoconochco** from Lesson 5
    - Codex Mendoza Tribute Records for Aztec Province of Tepecuacuilco** from Lesson 5

#### Gather and prepare Assessment Masters

- Prepare Alternative Unit Assessment Masters

### Materials Needed

#### A-V equipment:

- Overhead or LCD projector, screen

#### Class supplies:

- Colored pencils

#### Assessment Masters:

- **History, Physical Geography, Natural Resources, and Decision Making**  
SM, Pages 9–10  
One per student

### Suggested Scoring

Students who have mastered this unit's materials will: locate the Aztec region and include two landforms; and answers about climates, ecosystems, and the Aztec culture and, the role of history in current day decision-making regarding natural resources. The map and Answer Key on page 29–30 provide sample answers and a scoring guide. The total possible score is 100 points.

### Preparation Time

20 min.

### Assessment Time

55 min. (class)  
30 min. (homework)

### Safety Notes

None



# Procedures

## Step 1

On the day before the assessment, have students organize the following Activity Masters from their unit folders:

- **Mexico, Central America, and South America** from Lesson 2
- **Landform Facts** from Lesson 2
- **Latin American Climates** from Lesson 3
- **Latin American Ecosystems** from Lesson 4
- **Decision Making: Distribution of Goods and Resources** from Lesson 6

## Step 2

On the day of the assessment, have students take out their unit folders. Distribute **History, Physical Geography, Natural Resources, and Decision Making** (Alternative Unit Assessment Master).

Review the instructions for both parts. Display copies of the following in the classroom. Explain that these can also be used as resources:

- **Codex Mendoza Tribute Records for Aztec Province of Tochtepec** (Lesson 5 Activity Master)
- **Codex Mendoza Tribute Records for Aztec Province of Xoconochco** (Lesson 5 Activity Master)
- **Codex Mendoza Tribute Records for Aztec Province of Tepecuacuilco** (Lesson 5 Activity Master)

## Step 3

Explain to students that they will work on this assignment individually. Tell them that they can complete the assignment in class, but they can also work on it as homework. Tell students that you will be available during class to answer any questions.

## Step 4

Collect any completed work at the end of the class. Remind students that their work is due the next class session.



## Answer Key and Sample Answers

### History, Physical Geography, Natural Resources, and Decision-Making

Alternative Unit Assessment Master | page 1 of 2

Name: \_\_\_\_\_

1. Locate and label the following: (4 points each)

South America  
Mexico  
Central America  
Pacific Ocean  
Caribbean Sea

2. Locate and label 2 landforms for each of the three regions (5 points each)





## Answer Key and Sample Answers

### History, Physical Geography, Natural Resources, and Decision-Making

Alternative Unit Assessment Master | page 2 of 2

Name: \_\_\_\_\_

#### Questions

Select one of the regions on your map and complete the following tasks.

3. Identify one of the landforms on your map. (5 points) Lake Texcoco
4. Describe the climate that is associated with the landform you identified. (5 points)  
Tropical wet-dry. This area is wet all year. It sees at least 2 inches (60 millimeters) of rain per month and as many as 260 inches (600 centimeters) per year. Temperatures are always warm at 64°F (18°C) or higher.
5. Identify an ecosystem in this area. (5 points)  
Wetlands, rainforests, or grasslands
6. Name one ecosystem good and a product made from this good that come from this area. (5 points)  
Reeds, reed boats
7. Describe one ecosystem service that is important to this ecosystem. (5 points)  
Reeds and cattails provide food and shelter for a variety of young fish.
8. Who made the decisions about the supply and use of natural resources in the Aztec culture? (5 points)  
The wealthy ruling class
9. What were the advantages of this decision-making process? (5 points)  
The Aztec could efficiently acquire items from distant provinces and quickly build up wealth in their capital. People in the provinces could take advantage of trade networks and access to more luxury goods.
10. What were the disadvantages of this decision-making process? (5 points)  
Many of the subject peoples of the empire despised the Aztec overlords. Most goods of significant value were taken far away from the people who produced them.
11. Explain how knowing the geography and history of Latin America can help individuals and government agencies make decisions about the use of natural resources today. (10 points)  
The history of the Maya, Aztec, and Inca tells us how different cultures used their natural resources. We learned how each society used and managed the resources. We saw how resource use influenced the growth and decline of cities. Similar resource issues face us today in our communities and in our state. We can use our knowledge about past history to help us understand current-day resource issues and make good decisions.







# Extensions & Unit Resources



## Extension Ideas

**Unit Mural:** Talk about the importance of murals as a form of expression for Mexican and Chicano artists. Use a wall map as the beginning of a virtual mural, allowing students to add artwork inspired by each unit throughout this lesson.

**Ch-Ch-Ch-Chia:** Did you know the original Chia pets were grown as offerings to ensure fertility in Mexico? Introduce your students to this important Aztec grain by growing a Chia Pet in the classroom. At the end of the unit you can eat the greens like alfalfa sprouts.

**California Codex:** Imagine if a major California city demanded tribute from each county in the state. Ask students to research five counties and list the kinds of raw products and finished goods they could provide in the style of the Codex Mendoza.

**Clothing and Climate:** Show students pictures of traditional clothing worn in Mexico, Central America, and South America and ask students to imagine the climate where the clothing is worn.

Encourage students to research modern Cuzco and Mexico City:

- Which of these cities continues to be a national capital?
- Which city continues to have a large population and cultural, political, and economic influence?
- Why do these Pre-Columbian cities continue to be important through the present day?
- Contrast these cities with two cities in the former Maya heartland (Merida, Mexico and Flores, Guatemala).

## Resources for Students

Berger, Barbara and Laura Buller, eds. 1993. *Eyewitness Books: Aztec, Inca, and Maya*. New York, NY: DK Publishing.

McIntyre, Loren. 1975. *The Incredible Incas and Their Timeless Land*. Washington, DC: National Geographic Society.

Stuart, George and Gene S. Stuart. 1977. *The Mysterious Maya*. Washington, DC: National Geographic Society.

Wood, Tim. 1996. *See Through History: The Incas*. Oxford: Heinemann Publishers.





## References for Teachers

- Berdan, Frances F. and Patricia Rieff Anawalt, eds. 1992. *The Codex Mendoza*. Berkeley, CA: University of California Press.
- Berdan, Frances. 2006. Circulation of Feathers in Mesoamerica. *Nuevo Mundo Mundos Nuevos*, Numero 6. <http://nuevomundo.revues.org/document1387.html>
- Davies, Nigel. 1997. *The Ancient Kingdoms of Peru*. New York, NY: Penguin Books.
- Demarest, Arthur. 2004. *Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Cambridge, UK: Cambridge University Press.
- Gomez-Pompa, A., M.F. Allen, S.L. Fedick, and J.J. Jimenez-Osornio, eds. 2003. *The Lowland Maya Area: Three Millennia at the Human-Wildland Interface*. Binghamton, NY: Haworth Press.
- McEwan, Gordon. 2006. *The Incas: New Perspectives*. Santa Barbara, CA: ABC-CLIO.
- McKillop, Heather. 2004. *The Ancient Maya: New Perspectives*. New York, NY: W.W. Norton and Company.
- Schele, Linda and David Freidel. 1990. *A Forest of Kings: The Untold Story of the Ancient Maya*. New York, NY: William Morrow and Company.
- Tribute Lists from the Codex Mendoza. <http://www.chronofus.net/wargames/aztecs/Mendoza.pdf>
- Webster, David. 2002. *The Fall of the Ancient Maya: Solving the Mystery of the Maya Collapse*. New York, NY: Thames and Hudson.

## Instructional Support

Agencies, institutions, and organizations throughout California have identified themselves as providing programs and materials that support this unit. Links to these resources are available at [http://www.calepa.ca.gov/Education/EEI/instructional\\_support.html](http://www.calepa.ca.gov/Education/EEI/instructional_support.html)